

µIO-Stick User Manual

About this document

Scope and purpose

The µIO-Stick is an interface device for controlling Infineon board/kits during run time through PC.



Intended audience

This document is intended for anyone using a μ IO-Stick.



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1 Acronyms

1 Acronyms

The following table summarizes the acronyms and their meanings throughout this document.

Table 1 Acronyms	
Acronyms	Names
USB	Universal Serial BUs
BSL	BootStrap Loader
CAN	Controller Area Network
GND	Ground
GPIO	General Purpose Input Output
GUI	Graphical User Interface
HID	Human Interface Device
LIN	Local Interconnect Network
MISO	Master Input Slave Output
MOSI	Master Output Slave Input
NAC	No Activity Counter
NVM	Non Volatile Memory
PWM	Pulse Width Modulation
SBC	System Basis Chip
SPI	Serial Peripheral Interface
UART	Universal Asynchronous Receiver Transmitter
VS	Voltage Supply



2 Overview

2 Overview

2.1 Description

The µIO-Stick is an interface device for controlling Infineon boards/kits during run time through PC. It enables the connection between the evaluation board and USB for SPI programming and monitoring. Besides, it plugs into the evaluation board via a standard 16-pin connector and allows easy interface to the microcontroller via USB for communication through UART, SPI, LIN. It also implements GPIO ports, PWM generation up to 20 kHz and an analog measurement interface (ADC).

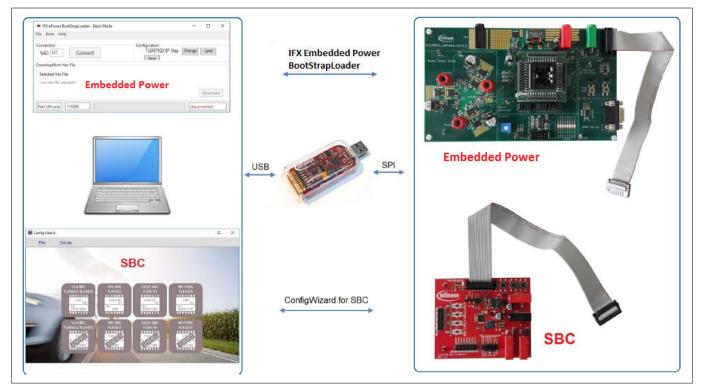


Figure 1 µIO-Stick Overview

The μ IO-Stick provide two exclusive functions:

1. Infineon Embedded Power Fast LIN BSL Support

The Infineon Embedded Power devices provide a built-in boot strap loader (BSL), for programming the embedded power devices over the built-in LIN transceiver or UART. The μ IO-Stick acts as an interface between the embedded power device and a PC. It handles the BSL protocols as well as the physical layers. A PC application provides access to all BSL functions of the Embedded Power device.

Supported Embedded Power ICs:

- TLE984x family
- TLE986x family
- TLE987x family

2. Run-Time Control - Programming and Monitoring

The μIO-Stick connects the Evaluation Board with the computer. Via the ConfigWizard software – a powerful and intuitive Graphical User Interface (GUI) – the user gets a customized programming, monitoring and evaluation support for various Infineon Automotive Products.

Supported Devices:

• System Basis Chip (SBC)



2 Overview

- High/low Side Switch (Spider+, SPOC)
- Half and Full Bridge Driver



2 Overview

2.2 Key Features

The µIO-Stick provides the following features:

- Communication with the connected device via LIN, SPI and UART
- Four GPIOs
- PWM signal generation up to 20 kHz
- Measurement of analog voltages up to 20 V
- Read and keep functionality to detect reset of the connected device
- USB HID device, no additional driver installation required
- µIO-Stick can power a target device
- Connected device can also be powered by external power supply for higher current
- 3 on-board status LEDs
- Additional BSL updater GUI for BSL communication with Embedded Power devices

2.3 Block Diagram

The μ IO-Stick consists of an XMC4200 micro-controller which provides the necessary hardware interface and handles the USB and BSL protocols.

LIN and RS232 are implemented as true physical layers (using LIN and MAX transceivers), while the digital lines (SPI, GPIOs) provide a 5V-TTL level.

In addition, a small switchable charge-pump is implemented to generate a +12 V/200 mA supply for the target device and the integrated LIN transceiver.

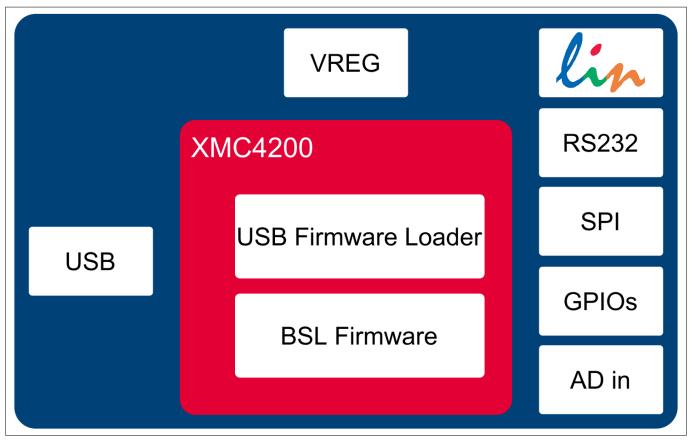


Figure 2





Hardware Connection 3

Pin Assignment 3.1

The µIO provides two interfaces, the USB interface to be plugged into the PC, and a 16-pin header to access the BSL interface. *Figure 3* provides a view into the 16-pin header of the µIO-Stick, including the pin numbering.

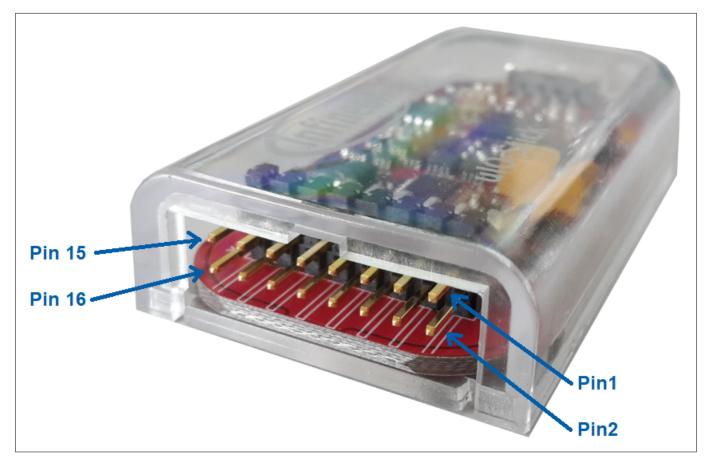


Figure 3 µIO-Stick Pin View

Table 2 lists the pin usage of the 16-pin header. The gray shaded pins are not used for BSL functions and therefore will not be considered further.

Table 2	μIO-Stick Pin Assignment
PIN	Description
1	RS232-TxD (out)
2	GND
3	RS232-RxD (in)
4	+5 V (USB, out)
5	LIN (physical, in/out)
6	VS (target supply, in/out)
7	Target Reset (5 V, out)
8	GPIO3 (5 V, in/out)



Table 2	μIO-Stick Pin Assignment (continued)				
PIN	Description				
9	SPI/CS(5 V, out)				
10	GPIO2 (5 V, in/out)				
11	SPI CLK (5 V, out)				
12	GPIO1 (5 V, in/out)				
13	SPI MISO (5 V, in)				
14	GPIO0 (5 V, in/out)				
15	SPI MOSI (5 V, out)				
16	analog in (max. 18 V)				

Pins 1, 3 - RS232 They are used for UART BSL communication and need to be connected to the corresponding RS232 inputs of the target board.

Attention: The R\$232 pins are no TTL pins but real R\$232 levels (MAX232 driven).

Pin 5 - LIN This is the LIN bus connection to the LIN transceiver implemented in the μ IO- Stick, it is suited to drive a corresponding LIN input of the target system.

Pin 7 - Target Reset This pin is intended to drive the reset input of the target device in order to synchronize the device state with the attempts to establish a BSL connection. The connection of this pin to the reset of the target device is not necessarily required, as synchronization can also be achieved by:

- power cycling of the target device by Pin 6 (VS)
- keeping the target device in BSL mode by configuring an appropriate NAC value

Pin 2 - GND This is the common ground connection to the target system.

Pin 6 - VS This pin can either be driven from the implemented charge-pump of the μ IO-Stick (+12 V/200 mA) or can be overridden by an external supply, i.e. the supply of the target device. This pin is also being used to internally drive the LIN transceiver available on the μ IO-Stick. If BSL communication over the LIN interface is intended, then the supply of Pin 6 is mandatory.



3.2 Examples

Figure 4 shows the minimum required connection from the μ IO-Stick to the target device in order to establish a BSL communication over the LIN interface. This applies to both Normal-LIN and FastLIN protocols. To be able to establish a BSL connection, the target device either has to stay in BSL mode upon power up (fresh device), or a power cycling (VS - Pin 6) done by the μ IO-Stick would be required.

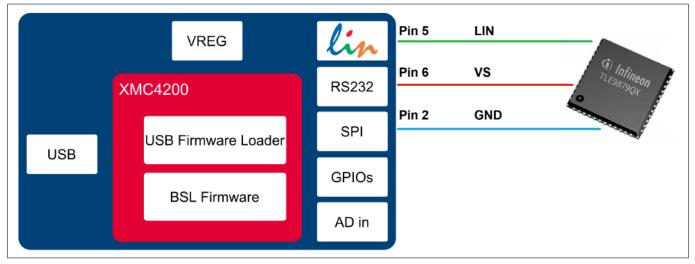
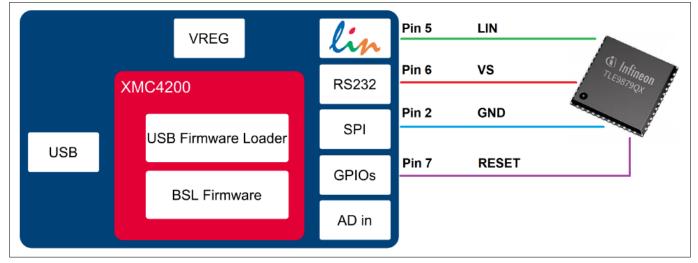


Figure 4

Normal LIN and FastLIN connection, without reset, target supplied by μ IO

Figure 5 shows a connection scenario with reset. The μIO-Stick actively resets the target device in order to start BSL communication. In this case a power cycling of the VS (Pin 6) by the μIO-Stick would not be required.





Normal LIN and FastLIN connection, with reset, target supplied by μ IO



Figure 6 shows a connection example where the target device and also the μ IO-Stick is supplied by an separate power supply. Since in this case the μ IO-Stick would not be able to perform a VS power cycling to restart the device it is wise to connect the reset line as well. If the target device stays in BSL mode upon power-up, such as for a new, unprogrammed device then the reset line is not required.

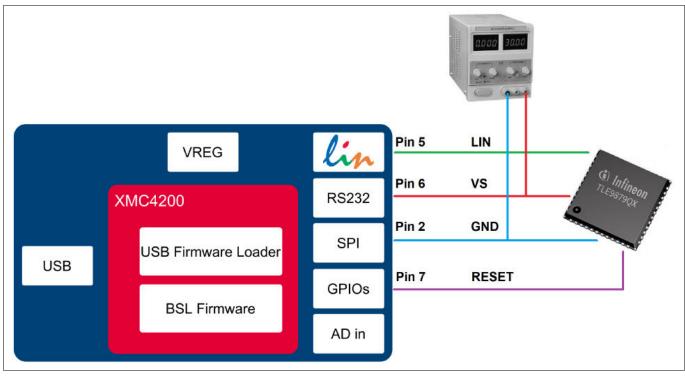


Figure 6

Normal LIN and FastLIN connection, with reset, target supplied by separate power supply



Figure 7 shows another example of how to connect the µIO-Stick to the target device, by simply plugging the ribbon cable to the BSL-connector of the evaluation board. Hereby all interfaces (LIN and UART) are supported.

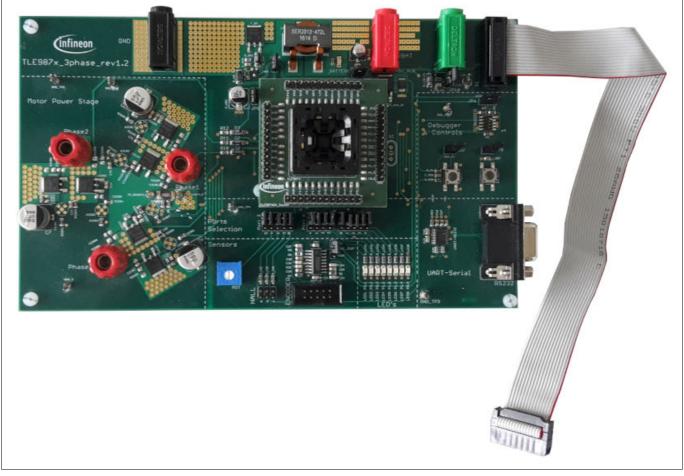


Figure 7

Direct connection of $\mu\text{IO}\xspace$ Stick to evaluation board, LIN-, FastLIN- and UART-BSL



$4\,\mu\text{IO-Stick Firmware Update}$

4 μIO-Stick Firmware Update

The µIO Stick comes with the capability to update the firmware of the integrated XMC4200 micro-controller either to provide new features to the customer, or to be able to correct issues with the firmware.

To update the firmware, the file uIO-Updater.exe and a HEX file is required. uIO-Updater.exe is a command line tool, where the hex file to be loaded has to be given as command line input. For example:

C:\>uIO-Updater.exe -FW="bsl_1.1.346.fw"

The example above flashes the "BSL_V1.1.346.hex" file into the μ IO-Stick. After the firmware update has finished, please unplug the μ IO-Stick from USB and reconnect it.



5 Fast LIN BSL Support

There are two software components required to use the BSL feature of the target device. Part 1 is the firmware of the XMC4200 microcontroller mounted on the μ IO-Stick. This firmware is responsible to generate the BSL communication protocol. Part 2 is the BSL user software running on a Microsoft[®] Windows[®] PC. It provides the user interface and prepares the data packets to be sent to the μ IO-Stick and further to the target device.

5.1 Installation Guideline

- **1.** Go to the section **Tools & Software** of the μ IO-Stick
- 2. Download uIO_BSL_Tool.zip and extract all the files
- 3. Connect the µIO-Stick via USB to the PC and via the 16-pin connector to the target device
- 4. Update the μIO-Stick with the current BSL firmware version by executing the script **UpdateBSL**
- 5. Launch the application **BSL_Tool.exe**

5.2 BSL Tool

The BSL GUI tool is the user interface to control the BSL interactively. It provides two modes of operation, a Basic Mode and an Expert Mode.

5.2.1 Basic Mode

The Basic Mode provides a reduced user interface limited to the minimum required actions, such as download of code into the target device.

Figure 8 shows the user interface of the Basic Mode.

 IFX ePower BootStrapLoader - Basic Mode 		-		×
File Extra Help				
NAD: 127 Connect	Configuration TLE9879QX BF-Step	Change	Load]
DownloadNvm Hex File Selected Hex File: <no file="" hex="" selected=""></no>				
			Downlo	ad
Fast-LIN only 115200			nected	

Figure 8

BSL Tool - Basic Mode

5.2.2 Expert Mode

The Expert Mode provides much more functionality, all functions of the BSL modes supported by the target device are available in this mode. In order to switch to Expert Mode from Basic Mode, select the Expert Mode in the Extra menu, as shown in *Figure 9* on page 14.



File Ex	tra Help	
	Expert mode	
Coni Ni	Configure Check for Update	Configuration TLE9879QX BF-Step Change Load Save
Select	ed Hex File: ex file selected>	

Figure 9

BSL Tool - Select Expert Mode

Figure 10 on page 15 displays the user interface of the Expert Mode. The Expert Mode enables all possible BSL actions, including target device erase, code download, device protection, code execution, and code upload. The arrangement of these functions in the GUI is kept in the natural order of execution of these actions, i.e. erase function at the top, followed by download, verify, etc..



e Extra Help	
onnection	Configuration
AD: 127 Connect	TLE9879QX BF-Step Change Load Save
Operation Auto Execute Auto Exec Erase Download Verify Protection Run Verify Download Verify Image: Download Verify Download Verify Image: Download Image: Download Image: Download Verify Image: Download Image: Download Image: Download Image: Download Image: Download Image: Download Image: Download Image: Download Image: Download Image: Downlo	Logging Save as Clear

Figure 10 BSL Tool - Expert Mode

5.2.3 Configuration Dialog Box

Before a BSL connection is established, the target device and the BSL interface and protocol have to be selected. The Configuration block lists the currently selected target device, while the status bar at the bottom of the window displays the selected BSL interface/protocol and baud rate. In order to change these settings, press the Change button inside the Configuration block. Please also refer to *Figure 11* on page 16.



 IFX ePower BootStrapLoader - Expert Mode File Extra Help 	- C ×
Connection NAD: 127 Connect	Configuration TLE9879QX BF-Step Change Load Save
Operation Auto Execute Auto Exec	Logging Save as Clear
Erase Download Verify Protection Run	^

Figure 11 BSL Tool - Configuration Button

Figure 12 displays the Configuration dialog. Here, the user selects the desired target device, BSL protocol, baud rate, and the behavior of the integrated VS charge pump.

Target device:	TLE9879QX B	F-Step	~
Protocol:	Fast-LIN	*	
Baud rate:	115200	~	
Pin VS:	ON	~	

Figure 12 BSL Tool - Configuration

- Target Device select the target device from the pull-down list.
- Protocol select the desired BSL protocol and BSL interface:
 - Normal LIN BSL communication uses real LIN frames, Master-Request frames, and Slave-Response frames. In order to distinguish these BSL LIN frames from real LIN frames, the checksum is inverted. Communication is via the target device integrated LIN transceiver.
 - Fast-LIN UART like BSL communication using the device integrated LIN transceiver. This is the default protocol for new, unprogrammed devices.
 - UART full-duplex UART communication over UART1 of the target device.
- Baud Rate selects the communication baud rate.
- Pin VS selects the usage/behavior of the VS pin (Pin 6):
 - Off the μIO-Stick integrated charge pump is switched off, VS must be supplied by the target system, see also *Figure 6* on page 10.
 - On the μIO-Stick integrated charge pump is switched on, and remains on. Please see also *Figure 5* on page 9.
 - Off during Reset the μIO-Stick integrated charge pump is switched off during the reset phase before the connection attempt is started, see also *Figure 4* on page 9.



5.2.4 Establish a Connection

Once the configuration has been completed, the connection to the target device can be established. If the μ IO-Stick is not connected to the PC system, the Connect button is shaded gray, as shown *Figure 13*.

IFX ePower BootStrapLoader - Expert Mode	– 🗆 X
le Extra Help	
IAD: 127 Connect	Configuration TLE9879QX BF-Step Change Load Save
Operation Auto Execute	Logging Save as Clear
Auto Exec Erase Download Verify Protection Run	

Figure 13 BSL Tool - No µIO-Stick found

Once the µIO-Stick is recognized, by the BSL tool the connect button turns orange. By pressing the Connect button, the BSL tool tries to establish a connection using the selected BSL interface and BSL protocol.

 IFX ePower BootStrapLoader - Expert Mode 	- 🗆 ×
File Extra Help	
Connection NAD: 127 Connect	Configuration TLE9879QX BF-Step Change Load Save
Operation Auto Execute Auto Exec	Logging Save as Clear
Erase Download Verify Protection Run	

Figure 14 BSL Tool - Ready to connect to target system

Figure 15 on page 18 displays the connected state, the logging window states that the BSL communication has been established, and the status bar at the bottom of the window shows "connected".



e Extra Help	
AD: 127 Disconnect	Configuration TLE9879QX BF-Step Change Load Save
Deperation Auto Execute Auto Exec Erase Download I auto execute Download Verify Download Verify I auto execute Protection Enable I auto execute Run Run I auto execute Read Out Read Out Read Out Range from 0x11000000 to 0x1101EFFF	Logging Save as Clear BSL starting bootloader

Figure 15 BSL Tool - Connected

5.2.5 Loading a HEX File

The main use of the BSL tool will be the downloading of a HEX file, containing the user application code. Via the File menu, a HEX file can be chosen and loaded, see *Figure 16* on page 19.



Extra Help	
Load Hex File	Configuration
Load Config	TLE9879QX BF-Step Change Load Save
Save Config	
Auto Execute	Logging
Auto Exec	Save as Clear
Erase Download Verify Protection F	tun

Figure 16 BSL Tool - Loading a HEX file

5.2.6 BSL Actions

Once the desired Hex file has been selected, the supported BSL actions can now be executed. The order of the actions placed on the GUI follows a natural flow: Erase -> Download/Verify -> Protection -> Run.

5.2.6.1 Auto-Execute

Each of these action groups provides an "auto execute" check box. If it is checked, the corresponding action is added to the "Auto Execute" list. *Figure 17* on page 20 shows an example of the "Auto Execute" list, where everything except Protection is added to the list. By pressing the "Auto Exec" button, the actions added to the list are executed with a single click.



le Extra Help	
onnection VAD: 127 Disconnect Operation Auto Execute Auto Exec Erase Download Verify Protection Run Erase Erase • Full Chip • Rangefrom 0x11000000 ✓ auto execute • Used Sections to 0x1101EFFF Download Verify Download Verify Ø auto execute Protection Enable password set 0xFE Disable ✓ auto execute Run Run ✓ auto execute Read Out Read Out Read Out Read Out Read Out Read Out Range from 0x11000000 to 0x1101EFFF	Configuration TLE9879QX BF-Step Change Load Save Logging Save as Clear BSL starting bootloader user ERASE - auto execution enabled user VERIFY - auto execution enabled user PROTECTION - auto execution enabled user RUN - auto execution enabled (UN) - auto execution
Fast-LIN only 115200	connected

Figure 17 BSL Tool - Auto Execute

5.2.6.2 Erase

The action **Erase** erases the built-in NVM module of the target device. The user can select between various sections of the NVM to be erased, which are:

- Full Chip the entire user accessible NVM will be erased.
- Range from ... to ... only the user defined range will be erased.
- Used Sections only those NVM regions occupied by the selected HEX file will be erased.

5.2.6.3 Download

The action **Download** transfers a loaded HEX file into the target device.



5.2.6.4 Verify

The action **Verify** is used to check the integrity of the code inside the target device NVM against the selected HEX file.

5.2.6.5 Protection Enable/Disable

The action **Protection** either sets the protection of the target device, or resets it. In both cases, a password dialog opens up, the user has to enter an 8-bit password. See *Figure 18*.

 Password Dialog Password Confirmation
Password (1254) 254 ✔ decimal
Cancel

Figure 18 BSL Tool - Password Dialog

If the Protection is set, the target device does no longer accept any NVM change operations, nor allow code readout. In addition, the SWD interface (ARM) or the DAP interface (8051) is disabled.

To reset the Protection status, the same matching 8-bit password used to set the protection has to be provided in the Password Dialog. If the password matches, the entire NVM of the target device is erased and the target device is fully accessible again.

If the "Auto Execute" feature is being used for the Protection Action, then the Password dialog opens to be able to define the password used for the "Auto Execution" flow.

5.2.6.6 Run

The action **Run** starts the execution of the code inside the target device. The BSL connection is terminated by this action.

5.2.6.7 Read Out

The action **Read Out** is only available for the protocols "Fast-LIN" or "UART", it is not available for "Normal LIN". It reads and transfers the target device NVM content to the PC system. The user has to define the address range to be read.



5.3 Command Line Tool

In order to run the BSL actions none-interactively, a command line BSL tool is provided. It is named **BSL_Cmd.exe**, and should be run from a terminal window. Executing BSL_Cmd.exe without any parameters generates a list of the supported options, as shown below:

```
C:\>BSL Cmd.exe
_____
Bootstrap Loader Command Line Tool v1.2 build 638
_____
ERROR
              : missing arguments
Valid commands are:
                       connection mode and baud rate
-Cmode=baud, NAD
-EF
                       erase full chip
-ER=start-end
                       erase range
-D="hex file"
                       download hex file (repeatable)
-VS=n
                       function of VS pin. 0: off, 1:on, 2:off during reset
-V=1
                       verify after download
                       set protection
-PS=password
-PR=password
                       reset protection
-R100TP=page, "hex file" read the selected 100TP page and save it
-RO="hex file", start-end read out range into hex
-R=NVM
                       run in NVM
-R=RAM
                       run in RAM
-T=device
                       target device
-NACNAD=nac, nad, bslMode set NAC, NAD and BSL mode (F:fastLIN, L:LIN)
-W100TP=page, "hex file" write hex file to selected 100TP page
-Q
                       quite mode
mode
             : N/F/FO/U N=Normal LIN, F=Fast-LIN, FO=Fast-LIN-only, U=UART
baud
             : baud rate 9600..115200
             : defines the hex file for the download
hex file
             : selects 100TP page (1..8)
page
             : defines the start address for the operation
start
end
             : defines the end address for the operation
             : defines the target device (s. TargetConfiguration.xml)
device
```

The code above shows a call of BSL_Cmd.exe with various options, which are:

- -CFO=115200,1 : Fast-LIN-only, 115200 baud, NAD = 1
- -T=TLE9879QX : target device TLE9879QX, it has to match the device select list in the Configuration Dialog
- -VS=1:VS (Pin 6) on all the time
- -EF : Erase full chip
- -D="Blinky.hex" : downloads the Blinky.hex file to the target device
- -PS=0x55 : sets protection with the 8-bit password 0x55



6

Run-Time Control - Programming and Monitoring

Installation Guideline 6.1

- 1. Download and install the Infineon Toolbox
- Select the tab "Manage tools", search for SBC, and click "Install" 2.

Infineon Toolbox - I uncher	fineon tools in one place (2018.14.0)		:
Infineor Toolbox	Tools 🛛 🔹 sbd		? 🗹 🕸 🗣
聞 So	an QR code My tools Manage tools		
	A B C D E F G H I J K L M N O	PQRSTUVWXYZ	
2	Config Wizard for SBC Config Wizard for SBC allows easy configuration of Automotive SBC products.	Version: 2.1.0.201807061 Tags: ATV, SBC, Config Wi	

Figure 19

Installation of Config Wizard for SBC

Select the tab "My tools". If the installation was successful, you should see the icon for "Config Wizard for 3. SBC"

Infineon Toolbox - Infineon tools in one place (2018.14. auncher	·	>
Infineon Toolbox	Tools Vearch for tools	0 🖂 🌞 ∓
器 Scan QR code My tools	Aanage tools	
Config Wizard for ePower Details	Start Config Wizard for SBC	

Config Wizard for SBC installed successfully

Click on "Start" and select the required chip. 4.

Figure 20



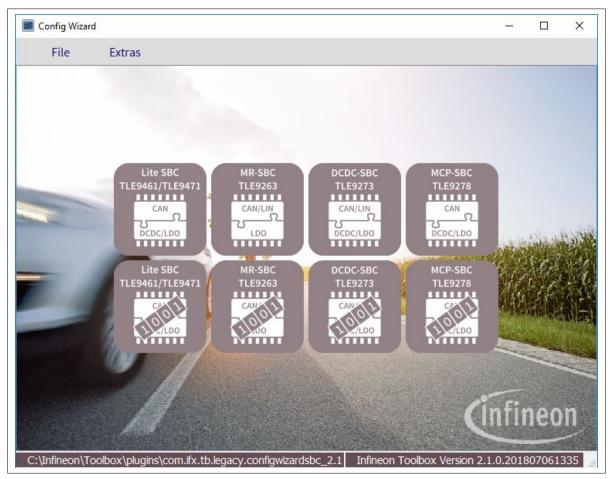


Figure 21 Chips for SBC in Config Wizard

For example, here with the TLE9278-3QX Evalboard correctly supplied, the following screen should display:

Connection Status / Signalisation Pin Status			Status				
uIO Stick connected	Target IC accessable	uIO Fimware Version: 2 . 2 . 1	Thermal Status	Supply Status 1	Supply Status 0	SMPS Status	Device Status
RSTN Pin activated	INT Pin activated	FO Pin activated	VCC1 OT BOOST OT	VB UV BST	POR VIO SC	BST ACT	DEV STAT1 DEV STAT0
Control Function MCP-SBC			SD2	VEXT OC	VIO UV FS	BST OP	SPI FAIL
			STSD1	VREG UV	O VIO UV	BCK SH	FO ON
Mode	BOOST	ADC / VIO	O TPW	VEXT OT		BCK OP	CLEAR
NORMAL SLEEP STOP Soft Re	BOOST 6.7 V -	ADC Result: 0 V		VIO WARN			WD FATI 1
	VEXT	O ADC con. to VBSENSE	CLEAR	CLEAR	CLEAR	CLEAR	WD FAILT
Normal Sleep / FS		OV Reset active					
Stop Soft Reset	□ VEXT 5.0 V ▼	UV Thresh. VRT1 💌	Bus Status 0	Bus Status 2	Bus Status 3	Wake Level Status	Wake Status 0 + 2
			CANTOO	CANTO2	CANTO3	C TEST	PEM PWM
CAN / Buck / BOOST / Watchdog Wake-up / W	oltage Sensing / FO / RSTN		SYSERRO CANO FAIL 1	CAN2 FAIL1	CAN3 FAIL 1	CFG1	CANO TIMER
CAN Configuration Buck / BO	DOST Configuration	Watchdog (WD)	CAND FAIL 1	CAN2 FAIL1	CAN3 FAIL I	PCFG	WK
CANO OFF - Au	tom. transition from PFM to PWM in Stop Mode	Time-out Watchdog	VCAN UV	CANTO1		VBAT UV	CLEAR
CAN1 OFF V	/M of Buck Conv. enabled by WK pin	O Window Watchdog		SYSERR1		© wĸ	VBAT UV
CAN2 OFF Villen	entering Stop Mode switch from PFM to PWM	WD active in Stop Mode		CAN1 FAIL1			CAN3
CAN3 OFF	entering stop mode switch from PPM to PVM	Start WD after CAN Wake		CAN1 FAIL0			CAN2
CANO Slew Rate Control off	ter 100 us						CAN1
CANUS Sew Rate Control off GAN1 Slew Rate Control off	ter 1 ms	After 3 consecutive WD fails:	CLEAR	CLEAR	CLEAR		CLEAR
	itch off BOOST on low voltage @VBSENSE	Continue reset generation					
CAN3 Slew Rate Control off		O Stop reset generation					
_			CLEAR I	DIAGNOSTIC STATUS	STOP	PERIODICAL READ OF	STATUS REGISTER

Figure 22

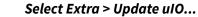
Config Wizard with SBC TLE9278



Warning:	Please ensure that the latest firmware is flashed onto the µIO-Stick. Otherwise, select the tab
	"Extra", then click "Update uIO".

Config Wizard	on Config	Wizard	
File	Extras		
	Settings		
	Open XML	Ctrl+O	
	Reopen XML	Ctrl+R	
	Search GUI element	Ctrl+F	
	Show differences	10.00	
e,	Expand branch	Ctrl++	
Q	Collapse branch	Ctrl+-	
	Get uIO version		
	Update uIO		
	Run script file		
	Record script	Ctrl+M	
	Add script command	Ctrl+A	

Figure 23



Select the file "uIO_V221.hex" and click "OK".

⊢ → • ↑					
	🔜 « applic	ation > uIO-Stick_Firmware	5 V	Search uIO-Stick_	Firmware
Organize 🔻	New folder				
🖈 Ouick acces		Name		Date modified	Туре
Device TL		ulO_V220.hex		06.07.2018 15:35	HEX File
Desktop Download Documen Pictures Blandine	* Is *	UIO_V221.hex		06.07.2018 15:35	HEX File

Figure 24

Select HEX file with the right version for µIO-Stick

When the update is completed, the μ IO Firmware version should be 2.2.1.



6.2 Config Wizard

The Config Wizard is a Graphical User Interface which provides an easy access to SBC features and the SPI registers.

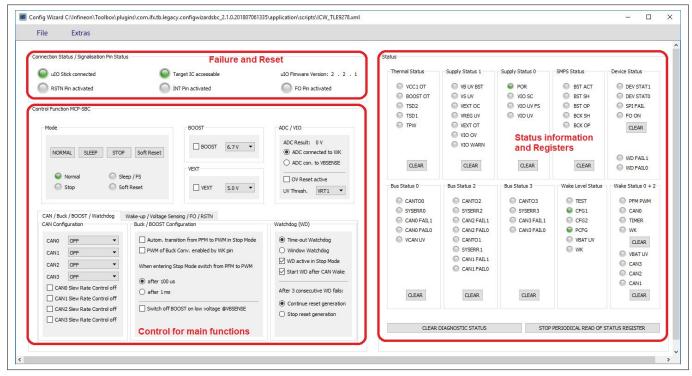


Figure 25

Config Wizard Graphical User Interface



Mode	SBC Mode Sel (State Machine SLEEP STOP		BOOST Boost Control	ADC / VIO ADC Result: 0 V
Norm Stop		p / FS : Reset	VEXT VEXT Control	 ○ ADC con. to VBSENSE ○ OV Reset active UV Thresh. VRT1 ▼
CAN Configurat CAN0 OF CAN1 OF CAN2 OF CAN2 OF CAN3 OF CAN0 Ster CAN1 Ster CAN2 Ster CAN3 Ster	F F F F F W Rate Control off N Channel	PWM of Buck When entering S after 100 us after 1 ms Switch off BC Bu	Contraction of the second s	Watchdog (WD) Time-out Watchdog Window Watchdog WD active in Stop Mode Start WD after CAN Wake After 3 consecutive WD fails: Continue reset generation Stop reset generation Watchdog Configuration

Figure 26

Config Wizard Control Functions



7 Updates and Purchases

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For updates of the BSL tool software or the μ IO-Stick firmware as well as for purchasing the μ IO-Stick, please visit *www.hitex.com/uio*.

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